

JPRS 79772

4 January 1982

USSR Report

TRANSPORTATION

No. 67



FOREIGN BROADCAST INFORMATION SERVICE

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AIR

AVIAEXPORT'S ACTIVITIES IN THE WORLD MARKET REVIEWED

Moscow FOREIGN TRADE in English No 11, Nov 81 pp 16-18

[Article by Vasilii Studenikin, general director of V/O Aviaexport: "V/O Aviaexport and the World Market"]

[Text]

The All-Union Association Aviaexport, an exclusive exporter of Soviet civil aircraft and importer of foreign aircraft equipment, was set up twenty years ago.

The Association began its activities by exporting piston-engine Il-14, An-2 and Yak-18 planes, and Mi-1 and Mi-4 helicopters. Later on the Il-18 and An-24 turbo-prop aircraft were added, and in subsequent years— Tu-134 and Tu-134A turbo-jet planes. The multi-purpose Mi-8 and Ka-26 helicopters created a great interest abroad, and large numbers of them were sold to many countries.

In the early 70-s, Aviaexport introduced new aircraft, including Il-62s, Yak-40s, Tu-154s and An-26s, designed by world-famous bureaus.

The Association does not slacken its efforts to diversify its export list. In 1978, first deliveries of the jumbo cargo plane— Il-76— were made to other countries, and later of its modification — Il-76M.

The steady progress made by the Soviet aircraft industry encourages exports, topping 600 million rubles in 1980.

The Association is increasingly extending the geographical distribution of its exports with more Soviet aircraft going to Angola, Mozambique, Peru, Laos, Kampuchea, the Madagascar Republic and other countries.

Over the two decades, Aviaexport has sold more than 4,000 planes and helicopters to 55 countries.

The Association regards its faultless operation as a primary responsibility, and in this field it has an upper hand as regards its competitors: it is the sole representative of the Soviet aircraft industry on the world market and, consequently, can provide the client with the entire gamut of servicing arrangements for after-sale services, from training specialists to overhauls. Thus, our customers have no need to apply to numerous sub-contractors or repair organizations: V/O Aviaexport is the only address they

have to keep in mind. Many sectors of the aircraft industry and other economic sectors of the Soviet industry effectively assist the Association in this work. The Association Aviazagranpostavka of the USSR Ministry of the Aircraft Industry also lends a helping hand in arranging exports and after-sale services. It has at its disposal an automated warehouse with 20,000 square metres of floor space, a computing centre and a printing plant for publishing technical and maintenance manuals for all types of aircraft.

Through orders only Aviaexport ships more than 100,000 different kinds of spare parts to its partners. Our main task with Aviazagranpostavka is to guarantee that foreign orders are supplied without delay. Aviazagranpostavka and the factories have standard spare parts lists. Incoming orders are processed by computers. Every two years Aviazagranpostavka arranges a conference for buyers and maintenance enterprises on improving spare parts supplies.

To set up maintenance depots for servicing exported aircraft, Aviaexport supplies assorted equipment and control and test gear. Besides, more than 100 planes have their annual regular service at technical bases in the Soviet Union, while up to 170 aircraft are overhauled at the repair plants of the USSR Ministry of Civil Aviation.

When selling a new plane or helicopter, Aviaexport assists in training foreign pilots and ground personnel. This specialized training is carried out by the Department of Education of the USSR Ministry of Civil Aviation through a ramified network of schools,

high educational establishments and centres. Every year the Association sends qualified engineers to assist airlines and organizations flying Soviet aircraft.

Aviaexport also issues handbooks containing information on the latest improvements in aircraft and components supplies. It provides customers with manuals, working models of engines and training equipment.

A long time has elapsed since Aviaexport began cooperating with other socialist countries' aviation enterprises, maintaining close business ties with them. Soviet aircraft are the ones mostly used by the CMEA countries' airlines.

The Czechoslovak CSA airline was the first among the socialist countries airlines to fly the Tu-104, Tu-124, Il-62 and Yak-40 jets, and the Polish LOT to introduce the Soviet Il-18, An-24 turbo-props, as well as Tu-134 and Il-62 jets and their modifications to its air routes.

The Balkan (Bulgaria) and Malev (Hungary) companies contributed by flying Tu-154s. In doing so, the experience gained from working with piston-engine and turbo-prop planes proved very useful. Soviet Ka-26 helicopters are extensively used in these countries' agriculture.

The Interflug company (GDR) has been operating Soviet planes for more than 25 years, and the Mi-4, Mi-8 and Ka-26 helicopters are a good help in many economic sectors.

The fleet of the Romanian Tarom company includes the Il-62M, Tu-154B aircraft and other models.

Internal lines in Cuba are serviced by An-2, An-24, Yak-40 and Il-18 planes, and they use Il-62M jets for international flights.

The MIAT airline operates An-2 and An-24 planes over an extensive network of air routes in Mongolia.

All these organizations assure that maintenance of their aircraft is kept at a high technical level by closely cooperating with Soviet design bureaus, factories and Aeroflot. The foreign trade organizations Omnipol (Czechoslovakia), Pezetel (Poland), Nikex (Hungary) Technocommerz (GDR), CNA (Romania), Aviaimport (Cuba), etc. greatly assist Aviaexport in its work with air companies in the socialist countries.

Special mention should be made of the joint programmes of specialized and cooperative production in aviation manufacture. Cooperation between the Soviet and Polish industries in this field has been going on for over 30 years. The Association expands its cooperation in the aircraft industry with Czechoslovakia, Romania and other countries. In 1981, the USSR, Czechoslovakia, Cuba and Bulgaria signed an intergovernmental agreement on cooperation in constructing a workshop for the maintenance and repair of long- and medium-range planes in the USSR. By its active participation in this undertaking Aviaexport contributes to the implementation of the Comprehensive Programme for Socialist Economic Integration of the CMEA member-countries.

At present, the Association's annual trade turnover is five times higher than in 1964, and Aviaexport is confident that it will grow still further. In the nearest future the Soviet Union will begin the export of the 350-seater Il-86 and 120-seater Yak-42 passenger planes for local lines. The aircraft industry of the country is busily designing new models and improving the mass-produced ones.

The latest achievements of the Soviet aircraft industry were seen at the International Aviation and Outerspace Salon in Le Bourgé, Paris. This year the Mi-26 heavy helicopter was unanimously acclaimed as exhibit No. 1. Specialists from many aircraft companies who thoroughly inspected this machine were impressed by its technological excellence. This aircraft fully meets all international flying specifications.

Association's participation in Paris aircraft exhibitions promoted business contacts, imparted knowledge on the needs of foreign operators for new aircraft and assessment of their particular requirements.

By their high technical level, reliability, economy and comfort Soviet aircraft have won international marketing fame, and are greatly in demand. Thus new extensive sales prospects are assured.

The Association can be justly proud of its accomplishments over the two decades of its activities. But this success would not have been but for the tremendous scientific and technological potential of the Soviet Union, close

cooperation with the USSR Aircraft Industry, the USSR Ministry of Civil Aviation and other ministries whose factories produce all kinds of machines for servicing aircraft and helicopters, equipment and instruments.

By developing its export potential, the USSR's aircraft industry has gained a strong foothold on the world market and the All-Union Association Aviaexport has become known as a reliable trading partner.

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CSO: 1812/25

MOTOR VEHICLE

IMPROVING PRODUCTION AT BELAVTOMAZ

Moscow PLANOVVOYE KHOZYAYSTVO in Russian No 8 Aug 81 pp 74-78

[Article by I. Demin, director general of the Belorussian Association for the Production of Heavy Trucks (BelAvtoMAZ): "Technical Improvement of Production in Truck Manufacturing"]

[Text] BelAvtoMAZ is one of the largest production associations and was created in order to concentrate and specialize the production of heavy trucks, subassemblies, components and parts, accelerate the introduction of new technology, and increase on this basis production capacity. The Association includes three independent motor vehicle plants--Minsk, Belorus, and Mogilev, producing more than 30 versions of trucks of cargo capacity ranging from eight to 180 metric tons and more than 10 types of trailers and semitrailers.

The resolution of the problems associated with increasing the production of dump trucks of capacity 30 and 45 metric tons and also the problems of developing the capacity for the production of dump trucks and tractor-trailer rigs of the automatic dump type of capacity 75, 120 and 180 metric tons has required reconstruction and retooling of the enterprises, particularly the Belorus and Minsk plants, on the basis of scientific and technical progress.

BelAvtoMAZ has an effective science sector. At the Minsk Auto Plant alone there are five manufacturing-planning subdivisions, two large experimental shops and 12 scientific-research labs, including nine production-line labs, two experimental-design labs, and one metrology lab. There are over 1500 engineers and technicians in the manufacturing-planning services and labs, about half of whom participate in scientific developments. The Belorus and Mogilev Plants also have manufacturing-planning services and experimental-design facilities.

The science sector is headed by the deputy engineering director of the Association for Science and New Technology. His functions include direction of the scientific and engineering activities and the central plant labs, liaison with the scientific institutes and organizations, invention and rationalization activities, patent and licensing activities and current and future production expansion.

The primary measures associated with scientific and engineering progress are carried out into two directions:

development and initiation of production of new motor vehicle hardware and improvement of the technical and economic characteristics of the finished products;

development and improvement of the production base by reconstruction and expansion of the enterprises, introduction of the latest technology, mechanization and automation, scientific organization of labor, extensive use of computer technology and new forms of production control.

The scientific resolution of these problems is in large part the result of the current practice in the Association in the planning and stimulation of scientific and technical progress. Each year a plan for the introduction of new technology is approved by the director general at the beginning of the plan period. The Draft Plan is prepared by the Division of New Technology and Patent Affairs and Invention Activity and is then analyzed and discussed by the Scientific-Technology Council.

The plan includes the following divisions:

introduction of new types of automotive vehicles and other products (completion of the first production series);

use of advanced technology and mechanization and automation of the production processes in accordance with the national economic and departmental plans, and also the Association plan (the most important measures of their organizational and technological plans);

realization of the approved developments of the scientific-research institutes and the factory laboratories;

measures associated with scientific organization of labor;

introduction of automated control systems;

goals for the production planners, shops and services with regard to number of measures and overall savings from implementation of the organizational and technical measure plans;

conduct of the most important research and experimental operations by the central plant laboratories;

goals with respect to the development, testing, and use of inventions.

The schedules for realization of the measures and the responsible organizations are indicated for all the sections and aspects of the plan. Performance of the new technology plan is monitored by the technical director at meetings of the science and technology council, the plant technical councils, and the Association council.

Extensive effort was carried out in the Tenth Five-Year Plan in accordance with the new technology plan to develop and introduce into production new vehicle models. The lead enterprise of the Association--the Minsk Auto Plant--devotes its primary attention to improvement (modernization) of the products by improving their technical and economic characteristics and also by developing and improving the design

of a promising new family of trucks and truck-trailer rigs. Thus, in 1977-8 production of modernized trucks of the MAZ-5335 family was initiated. The traction and speed characteristics of the vehicles, the smoothness of operation (and consequently reduction of the vibratory load level in the cab), and the driver working conditions were improved. As a result the productivity of these trucks is 7-10 percent higher than that of the MAZ-500A model.

The design and technological developments for realization of the measures to improve quality and reliability led to increase of the major overhaul life of the trucks of the MAZ-5335 family (by a factor of 1.5) and increase of this life to 300,000 km, and also reduction of the servicing and overhaul manhours (by more than 20 percent). From the start of production these trucks were certified to the highest quality category. The economic effect in the national economy from the introduction of these trucks has been about 400,000,000 rubles.

In the Tenth Five-Year Plan the experimental-design efforts at the Minsk Auto Plant associated with developing the new MAZ-6422 high-productivity family of heavy trucks and tractor-trailer rigs were basically completed; these vehicles are at the level of the latest foreign analogs with regard to their technical and economic, operational and aesthetic characteristics. One of their most important advantages is the qualitative change of the spectrum of models and the dominance in the output of the mainline tractor-trailer rigs of cargo capacity 21-32 metric tons for intercity and international hauls, including container-transport trucks.

Since 1978 the Minsk Auto Plant has produced in quantity tractor-trailer container carriers of 32 metric ton capacity based on the MAZ-6422 three-axle tractor and the MAZ-9389 semitrailer. The new family of trucks also includes truck-trailer rigs of 28 and 22.5 metric ton cargo capacity (the former consists of the MAZ-6303 three-axle cab-beside-engine truck and the MAZ-8378 two-axle trailer; the latter consists of the MAZ-5336 two-axle tractor and the same trailer), the MAZ-5551 dump truck and a timber-hauling tractor of load capacity respectively eight and 21 metric tons. In 1981 manufacture of the series-produced MAZ-504B-5205A truck-trailer rig will be replaced by quantity production of the 21-metric-ton capacity truck-trailer rig, consisting of the MAZ-5432 two-axle tractor and the MAZ-9397 semitrailer.

The new trucks and tractor-trailer rigs have been developed with account for the Soviet and international standards and the directions of world motor vehicle construction with regard to improving the technical level. The high level of the new vehicles is also ensured by the development of several original components and assemblies (engines of increased power--280, 320, 360 hp--drive axles with planetary transmissions, steering mechanisms with built-in distributor, cab, brake system and electric equipment system, and so on). The operating life of the new machines will reach 400,000 km. The economic effect from production of the trucks and the tractor-trailer rigs of the MAZ-6422 family at the planned rate will be 380,000,000 rubles a year.

The primary objective of the Belorus Auto Plant in the Tenth Five-Year Plan was marked increase of the production of the 40-metric-ton BelAZ-548A truck and initiation of production of the 75-metric-ton BelAZ-549 trucks. The increase of the production rate required improvement of the reliability and service life of these machines, since the customers had serious complaints against them. To this end

design and manufacturing changes were developed and introduced, both in regard to the BelAZ-548A trucks and the yaMZ-42RN engines. As a result the technical and operational characteristics improved significantly and the technical readiness rate rose by 8-10 percent.

The introduction of production of the BelAZ-549 truck proceeded in parallel with the introduction of its primary subassemblies: engines, electrical equipment, tires, and so on. Along with increase of the output rate, measures were taken to improve the reliability, operating life, and adaptability to operation in low-temperature conditions (down to -60°C). The productivity of this truck was 1.8 times that of the BelAZ-548A version, i.e., it reached the design productivity. The economic effectiveness of production of this vehicle is 32,660 rubles a year.

In the course of the Tenth Five-Year Plan the Belorus Auto Plant carried out experimental-design studies directed toward the development of the BelAZ-7519 truck of capacity cargo 110 metric tons. This truck successfully passed its certification tests at the end of 1980 and the acceptance commission recommended it for series production. In 1981 the plant will produce the trucks in commercial quantities.

In the Tenth Five-Year Plan the Mogilev Auto Plant modernized the MoAZ-546P-D357P motor-scraper with scoop capacity 8 m^3 and the MoAZ-6401-9585 motor-train (for operation in underground conditions). These modernizations involved the use of a new hydromechanical transmission that increased productivity by 8 percent and measures were also introduced to improve driver working conditions.

The modernized MoAZ-7405-9586 motor-train has cargo capacity 22 metric tons in comparison with the 20-metric-ton capacity of the MoAZ-6401-9585 motor-train. These underground motor-trains are operating successfully in the construction of tunnels on the Baykal-Amur Mainline.

The Mogilev Auto Plant also initiated production of the MoAZ-6507 dump truck with improved productivity and cargo capacity 20 metric tons. This truck is intended for operation under difficult highway conditions and off-road. Its productivity is 1.69 times that of the KrAZ-256 truck.

The design departments of the Association have carried out scientific and research studies to improve the operational qualities of the trucks (fabrication and testing of aluminum-stock extendible loading platforms, evaluation of the impact strength qualities of the new cabs, experimental-design studies on reduction of the noise level of the trucks). Experimental sensors and modulators of the anti-lockup devices for the braking systems have been fabricated, the design of a braking mechanism with wedge-type expander has been developed, a study has been made of the influence of the suspension design parameters on the stability of the dual-axle trailers, an analysis has been made of failures of the transmission gears and drive axles in connection with the structural state of the metal.

Tests have been made in the Association of truck springs with the use of standardized-profile strip material, studies have been made of ways to reduce the weight of the trucks, efforts have been made to develop tractor units with gas turbine engines, experiments have been conducted on reducing the vibration and improving the smoothness of operation and the stability and controllability of the trucks and

truck-trailer rigs. The spare parts consumption norms have been refined, and the technical servicing of the vehicles during operation has been improved. The Belarus Auto Plant is providing direct support of the customers with spare parts, for which a technical servicing department has been set up in the enterprise with branches at the points of operation of the trucks.

With the assistance of the scientific and industrial institutes the science sector of the Association has carried out considerable work on the development and introduction of the latest technology and equipment for mechanizing and automating the production processes in accord with the various parts of the new-technology plan. With regard to metallurgy, studies have been made together with the Belorussian Polytechnic Institute on the use of metallized pellets in place of steel scrap in blast furnaces.

The scientific-research activity of BelAvtoMAZ also includes improvement of the semiautomatic machines for ferrous alloy castings, experiments on fabrication of rods in a heated fixture and from a cold-setting mixture. An effective technique has been developed for the production of high-strength iron based on complex alloys, a new technological process has been developed for wide-layer hard-facing of the truck frame cross members. Experimental work has been done to develop and introduce an automated data processing complex for weighing the charge materials. A design has been prepared for the second stage of the blast furnace exhaust gas cleaning system and the use of refractory fibrous materials to reduce the heat losses in the reheat furnaces (by 10-15 percent). Granulation of slag with electromagnetic separation has been introduced at the Mogilev Auto Plant. Studies have been completed on thermal strengthening of the frame longerons, and a production lot of trucks has been fabricated with the strengthened frame parts.

Considerable attention is being devoted to the problems of improving tooling life, specifically by diffusion chrome-plating. A technique has been developed for carburizing cold-upset tooling with subsequent heat treatment, which makes it possible to increase die service life by a factor of 2.5-3.

Studies are being made at the Belarus Auto Plant to develop the technology for welding high-strength steels, and a technique has been developed for welding the bed components of trucks of capacity 75-120 metric tons. Steps are being taken to reduce metal usage. For example, the introduction of a method for cold longitudinal expansion of parts of the head spindle type (to replace the turning, grinding and polishing operations) has increased the coefficient of metal utilization in these parts from 0.76 to 0.86. Experimental studies have been made on fabricating telescoping shock absorber parts from cermet material.

The Association has initiated a new technological process for coating plating tank racks with plastisol and also electro-erosion machining of die impressions, which makes it possible to reduce the milling operation manhours by a factor of three or four and increase die service life by 20 percent. Efforts are continuing to broaden the introduction of electrolytic sharpening of high-speed tools with grinding disks of cubic boron nitride.

The use in the trucks of parts made of polymer materials has exceeded 1500 metric tons; 287 different parts in the MAZ trucks are made from soft plastics. The use

in the truck and trailer structures of efficient curved metal profiles and T-form spring strip profiles has increased.

The primary direction in technological development in small-series production is the introduction of programmed numerically controlled machine tools, which raise labor productivity by a factor of 1.5-2.2.

In the Tenth Five-Year Plan the economic effect from introduction of the scientific developments, measures associated with the latest technology, mechanization and automation of the production processes, scientific organization of labor and production control has amounted to 34,000,000 rubles, which exceeds by 1,200,000 rubles the planned effectiveness. During the five-year plan 59,000 metric tons of ferrous metal rolled material, 92,200,000 kWh of electric power, and 20,500 metric tons of equivalent fuel have been saved.

The questions of improving product quality and certification of the products in the highest category occupy a particular place among the measures associated with scientific and technical progress in the Association. In the 1976-1980 period as a result of realization of the integrated plan for improving the technical level, quality, and competitiveness of the automotive vehicles the number of certified products increased from 18 to 30. All the serially-produced trucks and four models of the trailers and semitrailers made by the Minsk Auto Plant have been awarded the Symbol of Quality; three models of dump trucks produced by the Belorus Plant, a scraper produced by the Mogilev Plant, several products of the Baranovich Truck Subassembly Plant, and several spare parts and consumer goods items have received this award. The percentage of output of the highest quality category in the overall volume of production has reached 55.1 percent (51.9 percent in 1975), while at the Minsk Auto Plant this figure has reached 64.6 percent. The economic effect from the production of goods with the State Symbol of Quality is more than 1,500,000 rubles a year. The Association has close relationships with the Institutes of the Academy of Sciences of the Belorussian SSR, the Academy of Sciences of the Ukrainian SSR, the motor vehicle industry, Belorussian Polytechnic Institute and other such organizations. In all, joint operations are carried out with 66 institutes of the nation.

The closest contacts have been established with Belorussian Polytechnic Institute and with the technical and physical and mathematical institutes of the Academy of Sciences of the Belorussian SSR. The MAZ-BPI Scientific Training and Production Organization was created in 1974 on a cooperative basis. The activity of this association is carried out in accordance with long-term and annual plans, prepared in advance and approved by the council of this new association; these plans are an integral part of the enterprise technological development plan. The effectiveness of the joint operations carried out during the Five-Year Plan was 2.59 rubles per ruble of expenditure.

The creation of the MAZ-BPI Association was directed not only toward the development of joint studies for accelerating the introduction of the achievements of science into production, but also toward improving the system of cadres preparation for the motor vehicle construction industry. To this end a BPI academic department with the title: "Heavy Trucks" was organized at the Minsk Auto Plant, staffed by scientists from the institute and specialists from the factory.

The cooperation of BelAvtoMAZ with the institutes of the Academy of Sciences of the Belorussian SSS was formalized in 1979 by a directive on broadening their ties. In accordance with this document the NPO [Scientific and Production Association] Avtofiztekhn was set up on a cooperative basis. Its primary objectives are study and selection of the basic directions for the design and technological processes in the fabrication of motor vehicles, development of theory of motor vehicles in application to heavy trucks and truck-trailer rigs, study of truck component service life and development of recommendations for further improvement of their reliability and service life.

An important lever in ensuring successful performance of the tasks facing the enterprises of the Association with regard to accelerating scientific and technological progress is the worker material and moral stimulation system. On 1 January 1979 the Association changed over to the new system of planning, financing and economic stimulation of operations associated with new technology. The primary source for stimulation of these operations are the additional allocations to the material stimulation funds from the enterprise profit obtained as a result of actual reduction of the direct cost of production by using the new scientific and technical solutions provided for in the new-technology plan.

At the Minsk Auto Plant premium pay (13 percent of the nominal salary) has also been introduced in the technical departments for fulfilling the plan for introduction of organizational and technological measures and the savings resulting from this step. The premium pay scale is reduced by 15 percent for the departments and shops that do not fulfill the organization and technological measures plan.

Public reviews of the scientific and technological progress are carried out each year in the enterprises of the Association. The various shop and departmental teams which have achieved the best results with respect to introducing new technology and improving on this basis the effectiveness of production are awarded testimonial scrolls and premium pay from the material stimulation funds.

At the Minsk Auto Plant reviews are also conducted of the performance of the individual and team creative plans with respect to the introduction of new technology with annual summarization of the results. The winners are awarded the title: "Winner of the Minsk Auto Plant Prize" and are given a diploma and a monetary prize amounting to 200 rubles. Fifteen such prizes have been established, five for shop personnel and 10 for engineering and technical personnel.

The realization of the new-technology introduction system, the close cooperation with the scientific institutions and the organization of socialist competition and material stimulation of scientific and technological progress made it possible for the personnel of the Association to achieve significant successes in the Tenth Five-Year Plan. Production volume increased by 32 percent (plan was 28.5 percent) labor productivity increased by 27.1 percent (the planned figure was 25.4 percent). The over-plan output amounted to 91,400,000 rubles of product (including thousands of trucks and trailers), 23,900,000 rubles worth of cooperative delivery items, and 1,200,000 rubles worth of consumer goods.

The Belorus Auto Plant expanded at the highest rates, increasing production volume by 59.4 percent and labor productivity by 48.3 percent. The output of heavy dump

trucks increased. The Osipovich1 Truck Subassembly Plant increased its production by a factor of 3.4.

The Belorussian motor vehicle construction industry is facing major problems in the Eleventh Five-Year Plan associated with expansion of the production of truck-and-trailer-rigs for intercity and international hauls and dump trucks of large and super-large cargo capacity for the mining branches of industry. The personnel of the BelAvtoMAZ Association will perform these tasks with honor and will reach the goals outlined by the 26th Congress of the Communist Party of the Soviet Union.

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CSO: 1829/37

MOTOR VEHICLE

NEW DRIVING SIMULATOR IN USE

Moscow ZA RULEM in Russian No 9, Sep 81 (signed to press 28 Jul 81) pp 6-7

[Article by P. Men'shikh, special correspondent of ZA RULEM, Dnepropetrovsk:
"At the DOSAAF Organizations: Driving Simulator on the Way"]

[Text] Not so long ago an acquaintance stopped by at our editorial offices and began to describe enthusiastically a kiddie "motown" that he had seen at an exposition of scientific and technical creativity of youth in Moscow.

He said: "Just imagine. My son sat down behind the steering wheel of a driving simulator and now he dreams all the time of becoming a driver. He put together some chairs at home, called the structure the AT-01, and practically all the time is 'switching gears' and 'driving' somewhere...."

I recalled his comments while talking with the inventors of the AT-01 itself, which was shown at the exposition by young workers from the Dnepropetrovsk Production Combine of the DOSAAF [All-Union Voluntary Society for Assistance to the Army, Air Force, and Navy of the USSR]. I recalled it because our talk touched upon just such children who had long been "crazy" about cars and now have decided to learn properly how to drive, and upon our possibilities for helping them to learn in the early stages of driving training.

Electrical installer A. Martenko told us: "I liked very much the idea of including the driving simulator among the elements of the motown, but I had not expected that it would attract so much attention at the exposition. We had worked on the AT-01 from dawn till evening and it seemed to us that, upon 'starting' and 'accelerating' this simulator seemed to the trainee sitting behind the steering wheel a real car steered by a real driver."

Yes, that is as it should be. Worldwide and domestic experience shows that simulator training produces many advantages such as its indisputable effect on improving the quality, shortening the period, and reducing the cost of training and, which is particularly important, saving fuel and vehicle service life. That is why the organizations and departments offering basic and advanced driver training, including the schools and sports and technical clubs of the DOSAAF, are extremely interested in simulator equipment.

...The Dnepropetrovsk Production Combine of DOSAAF is a relatively small enterprise. Its driving simulator shop No 1 employs about 150 persons. That is as of now. It began operating on a much smaller scale seven years ago, when the combine was asked to build the AT-73, a cumbersome mechanical driving simulator with a genuine "Zhiguli" transmission, a noisy kilowatt engine and a labor-intensive housing.

The combine's director S. Leonov then pondered: "Why not try to design our own, more convenient and technologically easier model?" A former lathe operator and an engineer with solid production experience, Leonov was aware as no one else of how distant the AT-73 was from the combine's production possibilities. Besides, truth to say, driving school personnel showed no special interest in that simulator.

Assembler N. Usenko commented to us about that period: "The director had often visited us at the assembly sector and discussed a different model of the simulator. Well, in our sector the boys all are enthusiasts and many of them used to be model-kit assemblers, smart with their heads and hands. They followed up the director's idea and began to build mock-ups. The approach was as follows: the simulator should be accessible and of an elementary but well-conceived design that should resemble that of a real car. In one and one-half months the team redesigned the instructor's control panel and all wiring and built mock-ups of the transmission and brakes and removed the kilowatt engine. In a word, they practically designed a new simulator."

Electrician L. Kostin added: "We derived tremendous satisfaction from this job and we worked on it heedless of time, without clock-watching. Our model proved to be simpler and more reliable. Thus while the AT-73 could not work longer than 40 minutes without overheating, our prototype operated for eight hours without stopping. We tested it on drivers of varying age and class, on anyone willing. In July 1975 we transported the simulator to Moscow to the interdepartmental commission. I still remember the day when the models submitted by various enterprises were examined by the Chairman of the DOSAAF Central Committee USSR, Aleksandr Ivanovich Pokryshkin. He sat down behind the steering wheel and tested thoroughly the performance of our brain-child. Then we heard the words, "This driving simulator will live'...."

Now more than five years have passed since the Dnepropetrovsk Production Combine of DOSAAF started producing the AT-01. In the process, the design of this simulator was constantly refined. Each component, insofar as possible, was made more compact and more convenient to produce, repair, and adjust. Thus while the first models of the AT-01 contained 19 relays, later models have only 11. Many design superfluties could be deleted. The total number of the simulators produced by this combine has long ago exceeded 1,000. The enterprise already started to receive complete simulator sets for their first overhaul (four driving simulators and the instructor's control panel). The speedometers of many of the simulators register 20,000 to 30,000 km each. These figures are quite impressive, and they illustrate the operational potential of the AT-01.

However, this potential is most convincingly demonstrated by those who use these driving simulators. The Dnepropetrovsk Technical School of DOSAAF has been using the very first simulator set since the beginning--1975.

I visit the school and try out that set.

The foreman for production training S. Kotlyar tells me: "Over five years some 3,000 drivers in the B category were trained on this set. Each used a driving simulator for 8 hours. Assuming that the speedometer of a driver training vehicle records on the average 20 km per hour of use, the time spent on training with the aid of the AT-01 has resulted in saving nearly two and one-half such vehicles. As a corollary, this led to savings of 48 tons of gasoline, 16 complete sets of tires, spare parts, etc.... Four instructors have been replaced with one, who suffices to make the trainees think and sometimes confronts them with special challenges. Not bad, is it?"

Currently an adjustment of four training seats of two experimental models of driving simulators is under way at this technical school which is, as it were, the combine's testing laboratory....

Let us, however, return to the combine's production shops. Despite the acclaim won by AT-01--a model into which the Dnepropetrovsk workers put, so to speak, their heart and soul--it is no longer up-to-date and it cannot completely satisfy the needs of our training organizations. It will be replaced with an improved new prototype, the AT-1A driving simulator (also in the passenger-car version), which has passed departmental tests and was transmitted for production to the Kiev Experimental Pilot Production Plant of the DOSAAF. As for the Dnepropetrovsk combine, in the very near future it will organize the production of driving simulators in the truck version.

Of course, launching this new production will require considerable effort of the combine's workers. Changes in the production process and the acquisition of new materials and equipment are inevitable. Here too the combine's personnel are entitled to expect assistance from the Ukrainian DOSAAF Central Committee and from the Administration of Production Enterprises, USSR DOSAAF Central Committee.

Our training organizations are deeply interested in starting to produce the new driving simulator as rapidly as possible for the training of private passenger car owners, whose number is steadily increasing. Suffice it to mention that during the last year of the 10th Five-Year Plan more than a million cars were sold. The few available truck-version models of the simulator also are greatly needed at DOSAAF schools and clubs. So far, however, these exist in prototype form and their series production will require a great deal of effort by the designers and workers of the enterprises producing training equipment.

The combine's director S. Leonov assures us: "We on our part will do everything we can to provide the organizations of the DOSAAF with driving simulators in both car and truck versions."

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CSO: 1829/69

MOTOR VEHICLE

AVTOEKSPORT STATISTICS OUTLINED

Moscow IZVESTIYA in Russian 21 Oct 81 p 6

[Interview conducted by V. Shmyganovskiy with N. M. Dmitriev, Director General of Avtoeksport]

[Excerpts] The All-Union Association "Avtoeksport" was created 25 years ago. Since that time about five million Soviet cars, trucks, and motor buses of various types have been delivered to more than 100 countries around the world. A press conference devoted to the activity of this well-known foreign trade organization was held on 20 October in the International Trade Center on Krasnopresnensk Quay on the banks of the Moscow River for Soviet and foreign journalists.

The following are some of the figures and facts presented by N. M. Dmitriev, Director General of Avtoeksport.

Today Avtoeksport offers to its partners more than 450 types of cars and trucks, motor buses, trailers, motor scooters and garage equipment. More than 130 enterprises of the USSR are engaged in filling Avtoeksport orders.

About 700,000 trucks produced by MAZ [Mogilev Auto Plant], ZIL [ZIL Auto Plant], GAZ [Gorky Auto Plant], UAZ [Urals Auto Plant], BelAZ [Belorus Auto Plant], KRAZ [Kremenchug Auto Plant] and KAMAZ [Kama Auto Plant] are in operation throughout the world.

During the past year more than 270,000 "Zhiguli," known abroad as the "Lada," were exported. "Lada Cars of Canada" alone sells 15,000 cars a year in the Canadian market.

Over 80 percent of the total trade volume of Avtoeksport, amounting to more than two billion rubles a year, is with the socialist countries.

The Association imports the best foreign products. For example, over 30,000 "Shkoda" trucks from Czechoslovakia are in operation in the motor transport enterprises of the USSR.

9576

CSO: 1829/37

MOTOR VEHICLE

DEFICIENCIES IN AZERBAIJAN'S MOTOR VEHICLE TRANSPORT SYSTEM

Baku BAKINSKIY RABOCHIY in Russian 12 Nov 81 p 3

[Text] The question of the work by the republican Ministry of Motor Transport in developing inter-city passenger transportation within the republic was considered at a session of the Azerbaijan SSR Supreme Soviet's Commission on Transportation and Communication. The session took place under the chairmanship of deputy F.I. Kengerli. I.S. Akhmedov, the leader of the deputies' Preparatory Group and Sh.K. Kerimov, the AzSSR minister of motor transport, provided data. It was noted that more than 16 million persons in the republic were transported by passenger motor transport on inter-city routes in the republic during the first six months of the year. Every year the fleet of vehicles is being replenished with new comfortable buses; the repair and operational basis of transportation systems is improving and the standard of service to passengers is improving. In 1981, a motor vehicle station was put into operation in Lachinskiy Rayon and a bus depot was opened in Massallinsky Rayon.

At the same time, the work of individual enterprises of the Ministry of Motor Transport as regards organizing inter-city bus transportation within the republic and serving the passengers is not meeting increased demands. Enterprises of the ministry have not arranged precise operation by the bus fleets for regular communication on active routes. Traffic schedules are frequently violated. The inter-city passenger transport bus fleet connecting Baku with other cities is not being utilized with sufficient effectiveness.

The technological status of many buses does not meet contemporary service standards. Buses with hard seats and small passenger capacity are being operated on certain long-distance routes. On a number of occasions during the summer and the student vacation period, the bus transportation systems have not added more bus runs or buses on line.

In view of the increased scale of transport these days, bus depots and stations that were built many years ago are not providing adequate service to the passengers. Comfortable bus stops are lacking on many routes. There are serious deficiencies in the maintenance of motor vehicle transport.

The commission passed a decision appropriate to the problems under discussion.

S.A. Rustamzade, the chairman of the AzSSR Supreme Soviet and R.S. Kazieva, the secretary of the Presidium of the AzSSR Supreme Soviet participated in the work of the commission. (AZERINFORM Press Agency)

9887

CSO: 1829/50

MOTOR VEHICLE

BRIEFS

NEW BRIDGE--The graceful arch of the new bridge has linked the banks of the Moscow River in the north-western section of the capital. The bridge connected the newly built area of Shchukin with the new mikrorayony [administrative sub-division of urban rayons] of Strogino. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 46, Nov 81 p 4] 9887

HIGHWAY SECTION OPENED--One of the sections of the super-highway between Kurgan-Tyube and Dzhilikul, under construction in Tadzhikistan, has been opened ahead of schedule. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 46, Nov 81 p 4] 9887

NEW MOTOR VEHICLE FACILITY--Construction of a motor transport enterprise has begun in Biryulevo-West. The motor vehicle facility will be situated on a small tract of land. The triangular configuration of the building will permit all services to be compactly positioned in it. Space for maintenance shops, a three story enclosed parking garage and administrative-consumer offices will be allotted under one roof. The workers of shop number three at "Mospromproyekt" [Moscow Industrial Projects] have proposed using pre-fabricated structures in the construction to reduce building time. [Text] [Moscow MOSKOVSKAYA PRAVDA in Russian 12 Nov 81 p 3] 9887

NEW TRUCK--After long and difficult testing under conditions of severe winter and torrid tropical summer, several new model trucks "KraZ-260" [model 260 truck from Kremenchug Motor Vehicle Plant] have returned to the Kremenchug Motor Vehicle Plant. The trucks traveled tens of thousands of kilometers and passed this most difficult examination with flying colors. The "KraZ-260" is already going into series production in the present five-year period. The new truck is superior to its predecessors in many respects. It is lighter, has more power, can handle a heavier load, is more durable and has a longer service life. Its motor is more economical and the cab is more comfortable. On the basis of this model, powerful tractor-trailer units, dump trucks, timber-carrying vehicles and tractor trucks will be created and put into production in the future. [by T. Radzhabli from Poltava oblast] [Text] [Kiev RABOCHAYA GAZETA in Russian 15 Nov 81 p 2] 9887

MOSCOW BELTWAY STUDIED--The Urban Development Council of the GlavAPU [Main Administration of Architectural Planning] considered the technical and economic grounds for rebuilding the Moscow Beltway. Widening the route and increasing the number of traffic lanes is foreseen. The complete rebuilding of the existing underpasses and bridges and the creation of multi-level interchanges is being planned. Also

under consideration is the construction of several bridges across the Moscow River and the Moscow Canal and the equipping of the beltway with services and amenities. Motor vehicle service centers, garages and parking areas will be built. [Text] [Moscow MOSKOVSKAYA PRAVDA in Russian 10 Nov 81 p 3] 9887

MOTOR VEHICLE PRODUCTION--Togliatti (Kuybyshev oblast)--More than two thousand "Zhiguli" motor vehicles in excess of the plan have rolled off the plant's assembly line this year. At the AvtoVAZ [Volga Motor Vehicle Plant] industrial combine, the first group of new motor vehicles, the more comfortable VAZ-2107, have been assembled in honor of the October Revolution holiday. [Photo by Yu. Belozero (TASS)] [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 44, Oct 81 p 3] 9887

NEW CONTAINER-CARRYING TRUCKS--During the preparation of the draft of the USSR State Plan for Economic and Social Development for 1981, the State Committee for Inventions and Discoveries proposed the inclusion in the plan of 145 topics involving the use of 419 inventions. The implementation of these inventions would assure the assimilation of new types of production, the introduction of modern technology, the mechanization and automation of production methods. Therefore, it was recommended that the Ministry of the Automotive Industry prepare the first industrial series production in this year for the container-carrying truck, modification 7801, used in ports. The new vehicle is intended for use in the conveying, two-tiered stacking and reloading of 20-ton containers at large container centers, seaports and river ports. The inventions used in the design of the container-carrying truck improve its weight and high-speed characteristics which, in turn, will lead to increased productivity and work safety. Using one container-carrying truck will have the economic result of saving more than 20,000 rubles. In accordance with the 20 July 1978 resolution "On the Further Development of Machine-Building in 1978-1980," passed by CPSU Central Committee and the USSR Council of Ministers, experimental models have already been built, tested and recommended for series production. However, as prescribed by the testing, series production has not begun. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 38, Sept 81 p 7] 9887

YAROSLAVL PLANT PRODUCES MOTORS--Yaroslavl--The motors used in the powerful "Kirovets" tractors and in the KamAZ [Kama Motor Vehicle Plant], MAZ [Minsk Motor Vehicle Plant] and KrAZ [Kremenchug Motor Vehicle Plant] motor vehicles are equipped with fuel injection. The motors are produced by the Yaroslavl industrial combine "Dizel'apparatura" [Diesel Equipment], whose several thousand workers were ahead of schedule in fulfilling the nine-month plan for volume of production on September 24 and the nine-month plan for sales of output on September 22. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 1 Oct 81 p 1] 9887

NEW ARMENIAN ROAD OPENS--Transport traffic has begun on the highway from Berd to Krasnosel'sk in Armenia. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 24, Jun 81 p 3] 9887

CSO: 1829/50

RAILROAD

DEPUTY MINISTER INTERVIEWED ON BAYKAL-AMUR MAINLINE

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 30 Apr 81 p 3

[Report on interview with Deputy Minister of Transport Construction USSR K. V. Mokhortov by APN [Novosti Press Agency] correspondent R. Biktagirov (especially for KAZAKHSTANSKAYA PRAVDA), Tynda, Amurskaya Oblast: "Beyond the 'Basic Directions'--The Road of the Century Gathers Strength"]

[Text] "The Basic Directions of the Economic and Social Development of the USSR,' as adopted by the 26th CPSU Congress, includes the following: "To inaugurate the movement of trains on the entire length of the Baykal-Amur Railroad Mainline [BAM]." This brief sentence also has a direct bearing on Kazakhstan. Our republic must take a direct part in the building of this mainline.

A group of Kazakhstan specialists recently visited Tynda to coordinate a definitive work program. We are publishing in this connection the materials prepared at the request of the editors by the APN staff correspondent for BAM, R. A. Biktagirov.

To obtain the story of the grand project, the problems which have confronted the pioneer builders of the road, and what our countrymen must still do on the BAM, the newspaperman talks with the chief of Glavbamstroy [Main Administration of BAM Construction], Deputy Minister of Transport Construction USSR K. V. Mokhortov, a delegate to the 26th CPSU Congress.

[Question] Even the Decembrists, exiled by the tsar in the Transbaykal region, reflected on the very rich potential of the region which served as their place of imprisonment. However, Mikhail Bestuzhev wrote: "This blessed region is generously endowed with the gifts of nature concealed in the bowels of the earth. And these treasures have lain and remained buried for many years." So the "history of this subject" is a rich history.

[Answer] It is even richer than you think. Every student in our country now knows the popular saying of Mikhail Lomonosov's First Russian Academy: "Power will accrue to Russian Siberia." And if one talks about the first decisive actions by way of the most extensive development of the Transbaykal region, then

one can cite the year 1932--the 15th year of the existence of the Soviet state. It was then that there was adopted the decree concerning the construction of the Baykal-Amur Railroad Mainline. By 1941 they had built rails from a BAM station to Tynda (at the time a large transshipment settlement for the gold prospectors) but they had to dismantle them and transfer them to Stalingrad.

[Question] We now know where and why we are building the road. But do we know how to do it and, most important, are we capable of doing it? I am asking this because I know what difficulties the builders of the mainline are encountering.

[Answer] I can answer in the words of an American engineer who wrote in response to my article published in the newspaper MOSKOVSKIYE NOVOSTI. He wrote me that only the USSR has the capability for such an almost incredible program as the one we call BAM. Advancing arguments which do honor to the Soviet engineers, he suggests that we undertake the construction of a world railroad.

We will put aside the typically American pressure for record breaking in this field and the message which is not devoid of common sense. The fact is, of course, that up to now no one in the world has dared to build the rail line of such length as the BAM (3,145 kilometers) and in it to also resolve such scientific, technical and social problems (this the author of the letter does not take into consideration at all, which makes his plan absurd).

Well, in that the BAM is truly a record holder. Not one of my foreign colleagues has had to cope with the kind of enigmas we have encountered. The permafrost under our feet and the 50 degrees of frost in the air, the steep slopes on the routes, and the seismicity up to 9 points--such are the characteristics of our line. And what a cost for one North Muya tunnel!

But I will say that our native science and industry have provided us with all the necessary machines and materials which have enabled us to put installations into operation ahead of schedule and to achieve a 30 percent rise in labor productivity in the course of the 10th Five-Year Plan. From our BAM experience we have derived a great deal to help us resolve the technical problems in this plan. I would compare the taiga line with a space orbit: both there and here we are developing the unknown and both there and here we are putting to the test the latest achievements of the human mind.

[Question] And the result will be such that the Minister of Railways USSR, speaking at the 26th CPSU Congress said: "The enormous national economic importance of the construction project of the century, developed through the initiative of Leonid Il'ich Brezhnev, will be prized by not only our generation but by the future generations. Why?

[Answer] Because it will happen. It is already happening. In its report to the congress the BAM delegation, citing the six-figure quantities of ground excavated and concrete poured, the kilometers of operating tracks, and the number of bridges built, also alluded to the facts which bear witness to the fundamental changes in the region and its great contribution to the country's economic balance sheet. In the formerly dense taiga area there appeared not only stations and

sidings, but also two populated points which have acquired city status. Millions of tons of Yakutsk coal have gone out on the BAM tracks. Along the route there have grown up new timber and hunting industries.

The design of the report was itself a symbolic thing. The local experts embellished the report with a diagram map of the BAM, inlaid with semiprecious stones extracted in the territories adjoining the mainline.

As to how the new settlers are faring, the best evidence in this respect is the "population boom": the birthrate is three times the established local norms. For us, the managers of the construction projects, this generates additional troubles not covered by the estimates. It should be noted, however, that we have found a solution. The BAM is being built not only with increased rapidity but also with considerably reduced costs and we expect to use the assets saved to satisfy the needs of the young families.

But the importance of the BAM can, of course, be properly assessed by the future generations and the youngsters themselves, for whom we are today building kindergartens. We can judge this if we are aware of the suggestions submitted by the scientists (in the USSR Academy of Sciences there is a special council for BAM problems) to Gosplan USSR. These suggestions call for the establishment of 11 territorial production complexes and industrial centers in the operational zone. Some of these bear a truly unique character. The Udokan center for example. Its basis is the very rich deposits of copper available by open-pit mining operations. There will be copper and there will be a city. And that means bringing more good fortune to tens of thousands of people.

[Question] And all the work lies ahead—an entire region. It was after all quite recently that the next regular Komsomol detachment of construction workers--the 29th in succession--arrived at Ikab'ya. And from Ikab'ya to the tracklayers moving from the east and west—hundreds of kilometers.

[Answer] Yes, we still have not even cut through the clearing for the entire length of the Baykal-Amur road. But there are about 100 kilometers left. We are confident that within the assigned time period a train will start its run from Tayshet to Komsomol'sk-on-Amur.

As far as the last landing operation is concerned, how old are these children now? Twenty? And How old will they be in the year 2,000? Forty? That means they will decide the fate of the next century. You see, it is not without good reason that we have the saying: "We are building the BAM and the BAM is building us."

A final question, Konstantin Vladimirovich. As we know, the BAM was first widely publicized in 1974 when Leonid Il'ich Brezhnev delivered an address in Alma-Ata at the grand rally celebrating the 20th anniversary of the virgin soil. You plan to receive the envoys of Kazakhstan, who have come to Tynda to coordinate the plan for sponsorship of the construction of the Chara station—the same station which is opening access to the storehouse of the legendary Udokan you mentioned. What "protocol procurement documents" have been prepared at the main administration for this meeting?

[Answer] I must first of all mention that one of the basic slogans of the BAM people in the current year is: "Forward--to Chara!" So the arrival of the delegation is very timely. We are pinning a great deal of hope on the sponsors from Razakhstan, the republic which distinguished itself back in the first five-year plan by the construction of the Turkestan-Siberian Railroad. It is my hope that the heirs of that glorious epic poem will sustain the honor of the Kazakhstan brand and that they will show it to the class of its 42 predecessors--republic organization, krays and oblasts--on the BAM.

As to their work program, by a certain CPSU Central Committee decision of 25 February 1975, it embraces a broad complex of construction both at the station proper and at the settlement adjacent to it. It comprises a station for 300 passengers, a platform, and various administrative and production installations. Slated for construction in the residential sector are a 45 and 120-apartment house, a school for 1,176 pupils, a kindergarden, a 150-bed hospital and polyclinic, a pharmacy, a shopping center, a dining-room, a rayon personal service center, a bath house, and a hotel--in general, everything that is needed for a populated point for the transportation workers of a rayon center category. The total cost of the construction and installation work exceeds 50 million, which is one-half of the entire title list.

It would seemingly not be out of place to mention the benefits which accrue to the volunteers who have decided to test their strength on this key construction project. This includes a rayon coefficient of 1.7 on wages, a benefit applicable to all BAM workers, plus a 40 percent increment for work of the travel category--the so-called "wheel" benefits; also, the right to reserve housing comparable to the former place of residence and one-time grants for members of the families. Authorization was given for granting to the workers credit in the amount of 500 rubles for home purchasing, to be repaid in three years. Under a mandatory procedure the newcomers receive warm clothing and footwear. In accordance with the subcontract agreement with the Bamstroyput' [BAM Track Construction Administrations], the two construction and installation trains which have already relocated to Chara are to be provided with the facilities of the first Kazakhstan settlers, with their food supply and with medical aid and everyday services.

We believe that Kazakhstan Chara will be in no way inferior to Ukrainian Urgal and Georgian Niya--our beacons in the eastern and western wings of the BAM:--beautiful, convenient and merged with the national colors.

7962

CSO: 1829/309

RAILROAD

STATISTICS GIVEN FOR GENERAL DEVELOPMENT OF RAILROAD TRANSPORTATION

Moscow EKONOMICHESKAYA GAZETA in Russian No 41, Oct 81 p 2

[Article reviewing "Development of Railroad Transport"]

[Text] More than half of all the freight turnover fulfilled in our country by all the types of transport is assigned to the railroads. In the 10th Five-Year Plan a large amount of assets was invested in the development of a material and technical base for these railroads. The result has been a growth in the traffic and carrying capacity on the most important railroad lines.

By the end of 1980 the operational length of the railroads had reached almost 142,000 kilometers. Put into operation in the last five-year period were 3,200 kilometers of new lines and 3,900 kilometers of secondary tracks. A total of 4,600 kilometers of the roads were electrified.

The structure of the rolling stock fleet was improved. During the five years the steel lines obtained more than 354,000 new freight cars and approximately 15,000 passenger cars. The machine builders delivered more than 2,200 electric locomotives and about 3,000 mainline and 2,400 switching diesel locomotives.

In the 1976-1980 period the freight turnover of the railroads increased by more than 200 billion ton-kilometers. However, the volume of shipments attained was not sufficient to fully satisfy the requirements of the national economy.

In Light of the New Tasks

The decisions of the 26th Party Congress clearly and specifically defined the tasks for further development of railroad transport. Already underway is the preparation of a long-term comprehensive program for the development of transport.

The 11th Five-Year Plan has come to represent a period of acceleration of technical progress and consolidation of the material and technical base of the steel mainlines. In the 1981-1985 period the state is allocating to railroad transport capital investments which are considerably larger than those in the 10th Five-Year Plan. The volume of construction and installation work on projects of the production category is expected to increase by 29 percent.

There is planned a comprehensive development of the railroad networks of the principal regions. There has thus been recognition of the need to expand the transport

links connecting the Far East, Siberia and the North with the Urals, the Center, and the other regions of the European part of the country. Additional main tracks are being laid in a number of sectors.

To accelerate the development of the West Siberian oil and gas complex and the transport of Kuznetsk and Kansk-Achinsk coal and other products construction is being continued on the Surgut-Urengoy-Yagel'noye line; also, construction for the setting up of the Central Siberian Mainline in conjunction with the establishment of a new railroad outlet from the Kuznetsk Basin. There has been an increase in the carrying and traffic capacity of the railroads in the regions of Central Asia and Kazakhstan. These roads provide for the transport of agricultural products and Ekibastuz coal.

In accordance with the five-year plan, substantial development is accruing to the transport links in the regions of the Urals and the Volga, and the Northwest and Center of the European part of the country. In these areas they will complete construction of the Pogromnoye-Pugachevsk line and additional tracks on a number of lines. The traffic capacity of the approaches to the Moscow and Leningrad junctions will be increased. In the southern regions of European USSR also additional tracks will go into operation, particularly between Tuapse and Adler.

To further the increase in the length of the trains and the weight of the freight trains, there will be an extension of the receiving and shipment tracks of the lines connecting Lena-Tayshet-Novosibirsk-Omsk-Voynovka-Sverdlovsk, Kazan'-Moscow, Omsk-Kurgan-Sverdlovsk-Perm'-Kirov, Magnitogorsk-Beloretsk-Chishmy-Ul'yanovsk-Inza, and others. This work is in progress at approximately 1,000 stations. It is thus opening up the possibility of organizing mass traffic of heavy trains.

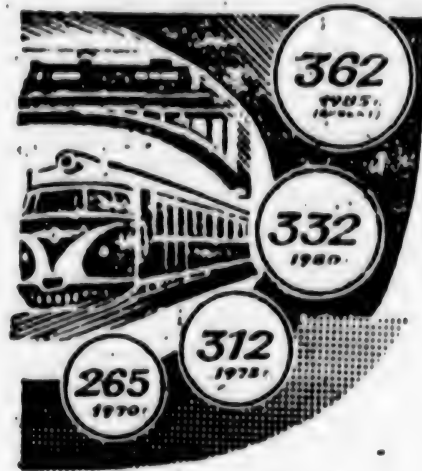
In the 1981-1985 period there will be considerable work done to reinforce the tracks, primarily by laying new rails, largely thermally hardened ones, as well as ferroconcrete crossties and jointless tracks. According to the outlines prepared by the MPS [Ministry of Railways], by the end of the five-year plan the total length of the roads on ferroconcrete crossties will reach 70,000 kilometers and the length of the jointless track about 60,000 kilometers of developed length.

In the 11th Five-Year Plan there will be further development of the locomotive, car, passenger, freight and track organizations and the repair base of the Ministry of Railways. Paramount importance is being attached to the task of improving the cultural and personal service conditions for the railroad workers. As per the MPS plan, the allocations for housing construction are nearly 17 percent more than in the preceding five-year period.

The Traffic Capacity Reserves

The current five-year plan calls for the implementation of a major program for increasing the traffic and processing capacity of the stations; this includes the increase obtained by the introduction of computer technology. The goal assigned is the establishment of a unified information system for the network of roads. Beginning to function as a basic link of this system will be support (sorting, sector and large freight) stations equipped with ASU [automatic control systems], which correspond among themselves and with the road computer centers in an automated system.

**Railroad Transport Passenger Turnover
(in billions of passenger-kilometers)**



For preparing the schedule for the movement of trains approval was given for the new program compiled on the third-generation electronic computers [EVM]. This program is based on a more favorable organization of the flow of cars; it will make possible a more rational distribution of the work among the sorting stations and it will increase the distance of the routes without processing.

A substantial reserve of the traffic capacity, particularly of the freight shipment lines, stems from increasing the weight and length of the trains. The Moscow railroad workers provide an example in this regard. By putting into operation the new technology for the forming and running of heavy trains along entire lines, the transport workers of the capital mainline have brought the weight of a freight train to 6,000 tons. During the last two years they have shipped more than 160 million tons of national economic goods in heavy trains.

This valuable work was, as we know, approved by the CPSU Central Committee. It is planned in the 1981-1985 period to increase the weight and length of the trains on mainlines with an extent of more than 65,000 kilometers. It will be necessary to increase by 91 tons the average train weight on the network of railroads.

Analysis of the operational activity of the roads shows that no less than 10 percent of the freight turnover of the railroads falls in the category of inefficient shipments. Elimination of these shipments is the most important requirement for a fuller satisfaction of the national economy's needs for delivery of goods. These matters are being addressed by the Gosplan USSR Interdepartmental Commission for Rational Transport.

On the Approach Tracks

Now adjoining the railroad stations are approach tracks of industrial enterprises and organizations with an overall length of 141,000 kilometers. They are carrying out 85 percent of all the loading and 75 percent of the unloading on the network of

railroads. Hence first-priority importance attaches to all-round development of industrial railroad transport, mechanization of loading and unloading operations, expansion of the warehousing operation and the loading and unloading fronts, and the introduction of container and package shipments.

In the last five-year period the layover of cars on approach tracks was reduced by half an hour. This made possible additional shipment of about 2 million tons of national economic goods.

Through creative application of the experience of the advanced collectives and improvement of the system of intersectorial socialist competition, good indicators were achieved by the workers of many of the approach tracks which serve the Belorussian, Baltic, L'vov and a number of other railroads.

But some ministries are still not giving sufficient attention to the task of improving the work of industrial transport. Guilty of excessively delaying rolling stock for loading and unloading are enterprises of Minchermet [Ministry of Ferrous Metallurgy] USSR, Mintsvetmet [Ministry of Nonferrous Metallurgy] USSR, Minzag [Ministry of Procurement] USSR, Minlesbumprom [Ministry of the Lumber and Paper Industries] USSR and Minkhimprom [Ministry of the Chemical Industry]. By the end of the 10th Five-Year Plan the average layover of cars on the approach tracks was 7.8 hours instead of the 6.8 hours prescribed by the assignment.

There should be introduced on the widest possible scale the CPSU Central Committee-supported undertakings of the Chelyabinsk workers for reduction of the time of layover of cars for freight operations and provision for their safety; also, the undertakings for well-coordinated work of the seamen, railroad workers, and motor vehicle operators of the Leningrad transport center. The collectives of the L'vov Railroad and the collectives of the enterprises and associations served by it set up a comprehensive system for effective use of the cars. The work of these collectives was also approved by the CPSU Central Committee. All this embodies significant factors in accelerating railroad car turnover.

Stepping up Service Expertise

Satisfying the population needs for transportation constitutes one of the crucial tasks of the railroad workers. In the last five-year plan the volume of passenger transportation showed a 6.3 percent rise. The pool of railroad cars was supplemented. For long-distance, local and suburban transport, the currently existing schedule has 488 long-distance, 506 local and 8,600 suburban trains.

In the 11th Five-Year Plan it is planned to increase passenger turnover by 9 percent. There will be a corresponding increase in the amounts of traffic for all types of transport. In the 1981-1985 period the mainlines will obtain about 15,000 new passenger cars. The all-round development of the passenger operation will continue with due regard for the high standards imposed for the passenger services.

Improvement of passenger service will be furthered by the introduction of a complete ticket sale control system, the Express-2, employing third generation EVM; this will be done primarily on the Moscow, Oktyabr', Southwestern, Sverdlovsk and North Caucasus railroads. In the future 10 such interrelated systems will begin to serve all the stations on the railroad network, where there are 16,000 ticket windows. The current five-year plan calls for the construction and remodeling of more than 250 stations.

There is urgent need to enhance the quality of all the passenger service at the stations and en route.

Although recent months have seen an improvement in adherence to the schedule for the movement of trains, there are still frequent instances of lateness of long-distance, local and suburban trains. The trains are often dispatched from the terminal points inadequately prepared and in untidy condition. En route the passengers by no means always obtain the necessary services. The Ministry of Railways [MPS] and the railroad administrations are taking measures to eliminate these deficiencies but there is need to implement these measures more energetically.

In eight months of the current year the MPS freight shipment plan was 100.4 percent fulfilled and the amount of freight transported was 26.7 million tons more than in the same period last year. Twenty-eight railroads fulfilled the shipment plan. Successfully carried through were the assignments for the delivery of petroleum and petroleum products, building materials, ferrous metals, coke, mixed fodder and grain and a number of other products.

Since the beginning of the year there has been some improvement in the use of the rolling stock and the traffic capacity of the roads. Continued progress has been made in reducing the time consumed by the cars in freight operations and in the technical stations. The result has been a tightening up of technological discipline and some escalation of the overall level of operational work and traffic rhythm.

At the same time, the Gor'kiy, Tselinna, Pridneprovsk and Donetsk railroads are failing to fulfill the plan for shipments. On the Kuybyshev, South Ural, Volga, South-eastern and Sverdlovsk mainlines advancing the flow of railroad cars is proceeding at a slow pace. They are lagging in shipments of coal, lumber, peat, flux, fertilizers and several other very important products.

The chief requirement for surmounting these deficiencies and obtaining complete fulfillment of the planned assignments is strengthened control over fulfillment in all the links of the railroads, stepped up creative activity on the part of the labor collectives, and dissemination of the advanced work experience. It is essential to complete in the near future careful and thorough preparation of the transport system for the winter season.

7962

CSO: 1829/36

RAILROAD

RESULTS OF INSPECTION OF RAILROAD CAR-BUILDING PLANTS GIVEN

Moscow EKONOMICHESKAYA GAZETA in Russian No 40, Oct 81 p 15

[Article by A. Kondrashov: "In Gosstandart [State Committee for Standards]--The Cars of the Railroads"]

[Text] All the stages--from the planning to the manufacture of railroad cars--have been the object of the attention of the workers of Gosnadzor [State Committee for Inspection]. They have visited 26 enterprises of Mintyazhmash [Ministry of Heavy Machine-Building] as well as the plants of the industries which produce the component units and parts. The results of their inspection were reviewed in a regular meeting of the board of Gosstandart.

In recent years Mintyazhmash has compiled and introduced normative documentation which is being used to improve the design of the freight cars and step up their dependability and quality. The enterprises of heavy and transport machine-building have put into production a number of new types of specialized cars, including automatic unloading cars--for grain and for bulk shipment of mineral fertilizers; also flatcars for heavy freight conveyers. They are all characterized by a high technical level.

But the inspection also brought to light another fact: because of design deficiencies, not all the types of cars in current use provide full safety for the products being shipped. On the covered cars there are not enough strong facing walls. The locking devices for the freight hatches are inadequate; this is true even at the recently modernized Altay car-building plant.

At the Gosstandart meeting they took note of the slow pace of introduction of light-weight metals in railroad car-building, particularly aluminum and its alloys for the manufacture of the car body, and for individual components.

In checking the quality of the planning documentation for the new eight-axle tank car of the Zhdanovtyazhmash [Zhdanov Heavy Machinery] Association for the shipment of petroleum products it was found that the technical assignment had not been coordinated with the customer. The service life of the machine was less than the stipulated one. The Gosstandart organs prohibited the use of the documentation in production.

The results of the check of six car-building plants showed that two of them are producing output with violations of the standards and technical requirements. The gasoline tank cars of the Zhdanovtyazhmash association did not conform to the drawings with respect to the dimensions. The welding of the units was substandard. The Gosstandart organs had to forbid the shipment of the defective output from the enterprise. Zhdanovtyazhmash's eight-axle gasoline tank car was not permitted to display the honorary pentagonal marking. The same strict measure was applied in the case of the passenger motor vehicle railroad car of the Kalinin car-building plant and the dump truck car of the Kaliningrad car-building plant.

The decision of the Gosstandart board calls for prescheduled certification in the current year of all the types of cars which were awarded the superior quality category. The board cancelled the registration for the introduction of the comprehensive quality control system in the Zhdanovtyazhmash and Bryansk Machine-Building Plant associations and in the Riga railroad car-building plant. Mintyazhmash was advised to accelerate the implementation of the progressive requirements in the designs of railroad cars as set forth in the full standardization program entitled "Cars of the Mainline Railroads."

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RAILROAD

BRIEF

"THE SHORT LIFE OF THE CROSSTIE"--The main administration for track of the MPS [Ministry of Railways] carefully reviewed the article "The Short Life of the Cross-Tie" published in EKONOMICHESKAYA GAZETA No 31. The administration confirmed the facts set forth in this article with reference to violations of technological discipline in the storage, antiseptic treatment and use of new and old crossties. The main administration for track of the MPS prepared a complex of measures for increasing the service life of the crossties. In particular, the crosstie treatment plants introduced new, more progressive processes for treating the wood and increased the norms for expenditure of antiseptic. In progress is manufacture of machines for deep splitting of the crossties before treating them. Being developed is a number of machines for mechanized warehousing of the crossties with increased hollowness. The introduction of these and other measures will enable us to increase the service life of the crossties. The main administration has established regular monitoring of this work. Director of the Proninskiy Crosstie Plant V. Volkov was notified of a severe reprimand for violation of the technological processes in the treatment of the wood. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 39, Sep 81 p 15] 7962

CSO: 1829/36

MISCELLANEOUS

KIRGHIZ ECONOMIST ON TRANSPORTATION PROBLEMS, SOLUTIONS

Frunze SOVETSKAYA KIRGIZIYA In Russian 4 Nov 81 p 2

[Article by Ye. Timonin, senior scientific associate at the Institute of Economics of the Academy of Sciences Kirghiz SSR, candidate in economic sciences: "Reduce Freight Delivery Time"]

[Text] Like the entire economy, transportation is developing according to plan. This can be said about any branch. But interaction and the coordination of plans is not always achieved, including among transportation branches which work together. There are considerable reserves in a fundamental improvement of the organization of shipping and in its skillful coordination. Progress in transportation is impossible without the overcoming of departmental psychology and without a more effective use of economic levers and stimuli.

A New Indicator Which is Needed

Transportation occupies a very important place in the republic's economy. However, since the 1960's the growth rates of capital investments in the branch have in effect not been growing. On the contrary, their proportion decreased from 11.7 to 7.8 percent. This has been creating a definite overstrain in the work of the branch with the result that the economy's shipping needs are not being fully met.

The poorly developed road network is a considerable brake. The class of roads in the republic basically does not correspond to the traffic intensity and, especially, does not provide for the future amounts of freight and passenger hauls. The road situation is especially bad in remote areas; but sometimes the automobile there is the only means of transportation.

Of course, the building of modern automobile roads requires expenditures. And considerable ones. In addition, as requirements increase, the cost of one kilometer of road construction increases. During the last decade alone it increased by more than two times. And in mountainous areas even more so. And it is continuing to increase. Nevertheless, this problem has to be solved.

Life persuades one with increasing insistence that the future belongs to large motor vehicle enterprises. They are more economical and more profitable. However, in our republic small motor vehicle enterprises predominate. There are even those in which the number of vehicles does not exceed 10. This is so-called departmental motor vehicle transportation. Its productivity is 1.3 times less, while its cost is 1.5 times more than in general use transport. And with us these midget enterprises make up almost 80 percent of the total. Calculations show that their elimination and consolidation would yield an economy of more than six million rubles a year.

Apart from motor vehicle transportation, there are also other types of transportation which are functioning successfully in the republic: railroad, water, and air. The efficiency of the operation of the transportation conveyor could be substantially increased through achieving rational interaction between all of the types of transportation. For example, in those places where the motor vehicle road network is developed it is advantageous to shift short hauls from railroad to motor vehicle transport. The advantage of this is determined by the shipping distance for hard coal of 90 kilometers, gravel--40, ferroconcrete products--200, and fruits and vegetables--500 kilometers. However, despite the great advantages of this kind of division of labor, the existing rates do not stimulate a transfer to motor vehicle transport. Although freight which is shipped by railroad is on route longer, clients prefer railroads even for shipments over short distances: it is cheaper.

Shipments over short distances are also unprofitable for motor vehicle transport workers. The indicator which has been put at the basis of their plan--ton-kilometers--is in clear contradiction to the sphere of the economically advantageous use of this type of transportation. Long hauls are more effective for the production of a large amount of ton-kilometers. But are they always rational? This is rarely thought about. But it should be. Precisely today, with an improvement of the economic mechanism in progress, thought should be given to how to create the kinds of conditions which will interest shippers and transportation workers in making skillful use of all types of transportation and in performing shipments over optimal distances with minimum expenditures. A new evaluative indicator is needed.

It seems to us that an indicator which characterizes the amount of hauled freight and the speed of its delivery could become such an indicator. The work of railroad stations and departments and of motor vehicle enterprises could be evaluated on the basis of their providing full and punctual output shipments in line with contracts and schedule orders. The average hourly speed of freight delivery could play a large role as an evaluative and planning indicator. It is now within the range of 10 kilometers an hour. This, of course, is very slow movement. But the indicator will help to speed it up.

Economic levers can also be used more effectively in the struggle against idle time on the railroad. We believe, for example, that it is necessary to introduce a fee for the time that railroad cars stand at sidings and during loading and unloading operations at stations, and also for cars which are held up by freight shippers. This kind of fee, instead of fines for above-norm idle time, would be more effective and economically expedient.

In order to increase responsibility for irrational shipments it is necessary, in our view, to plan for the sales and supply organizations of the system of Gosstob Kirghiz SSR and for industrial ministries not only the amounts but also the distance of shipments and assignments to eliminate cross-shipments, and to establish optimal amounts of transportation expenditures.

A Scourge--Cross-Shipments

The republic's economy receives especially large losses from cross-shipments. Here is an example. More than a million tons of Kirghiz coal is shipped out every year in the direction of Karaganda and Kuznetsk to South Kazakhstan and North Kirgiziya. But use could be made there of Ekibastuz or Kansk-Achinsk coal by improving its quality through thermal refinement and enrichment. Coal which is mined in the south of the republic should be used there. Or take the shipment of culm--coal dust. Today it goes from Kirgiziya to all of the republics of Central Asia and to Kazakhstan. Meanwhile, culm can be used locally. For example, coal briquettes could be made from it for municipal services. One could assign for these purposes two-three million tons of local coal which is now being shipped over distances that exceed the rational marketing zone. Research which has been performed in the Frunze Polytechnical Institute under the direction of Professor A. Dzhamanbayev has shown the possibility of obtaining high quality briquettes from local culm. If the "Sredazugol" combine and the planning agencies of the republics of Central Asia were to seriously work on the solution of this problem, railroad transport could be saved from shipping three-four million tons of Kuznetsk and more than two million tons of Kirghiz coal.

Another example. The Osh and the Fergana Heat and Electric Power Stations and the Kuvasay State Regional Electric Power Station are located in coal mining areas, but they operate on scarce mazut and natural gas. While hundreds of thousands of tons of coal are transported past them. This means that the fuel shipments could be put into order by means of having more rational ways of assigning the same coal mines to consumers. Calculations show the high effectiveness of this measure: transportation expenditures are decreased by more than 700,000 rubles, and the freight turnover of railroad transport is decreased by 53 million ton-kilometers.

Or take the shipment of building products and materials. Here also there are quite a few shortcomings. Thus, gravel and crushed stone are shipped out from the Dzhil'-Aryk and Tokmak stations to the areas of Western and Northern Kazakhstan, the Urals, and Western Siberia. The cost of the construction materials here increases by three times as a result of the transportation expenditures. Silicate brick is shipped to the same areas from Kirghiz plants.

For many years cement has been delivered to Oshskaya Oblast from the Kant Cement and Slate Combine, although from the national economic point of view it would be more advantageous to perform these shipments from nearby plants in South Kazakhstan and Uzbekistan.

Or take the delivery to the same South Kirgiziya of food and industrial goods. Wholesale trade bases are now located in Osh, Kara-Su, and Dzhalal-Abad. The grading of the goods is performed here. And then a substantial amount of them

which is designated for Ala-Bukinskiy, Frunzenskiy, Lyaylyakskiy, and Batkenskii rayons is presented a second time for return shipments. Calculations show that re-runs by goods come to 1,000 kilometers, and that every year the transportation expenditures exceed a million rubles. Then, why not give the allocations for food and industrial goods to nearby trade bases in the Uzbek and Tajik republics?

The problem of delivering raw cotton to processing enterprises can be solved in the same way.

Is it necessary to speak about the trouble irrational cross-shipments cause us? They create extra work for transportation and put an excessive strain on the capacities of mainlines. The republic's planning and economic agencies have to make a careful study of the reasons for them and eliminate them. The scientific institutions of the republic's Academy of Sciences and of Gosplan Kirghiz SSR have to provide definite assistance here for the ministries and departments.

Unfortunately, the level and intensity of scientific research work on the current technical and economic problems of transportation both by the republic's Academy of Sciences and by the scientific institutions of Gosplan, the Ministry of Motor Vehicle Transport and Highways, and other interested departments is clearly insufficient. The efforts of researchers are scattered and not coordinated. Moreover, in essence the republic does not have a single scientific institution or subdivision which is at work on solving the most important problems of the development of transportation.

An improvement of transportation communications and increased efficiency in transportation is an overall and difficult problem. Its solution depends upon the coordinated actions of the republic's planning, economic, and scientific agencies both in the field of siting production and of the specialization of the overall development of the economy and in the field of improving transportation communications, reducing expenditures for the delivery of freight, and improving the work of transportation itself.

2959

CSO: 1830/92

MISCELLANEOUS

DELAYS IN BUILDING MATERIALS DELIVERY

Deliveries by Truck

Tallinn SOVETSKAYA ESTONIYA in Russian 30 Aug 81 p 3

[Article by G. Kruger, Estonian SSR minister of Motor Vehicle Transport and Highways: "Building Materials--to the Construction Site"]

[Text] "Building Materials to the Construction Sites" was how the "Soviet Estonia" work brigade labeled its storming of the republic's construction sites.

We are publishing the answer to the newspaper's article:

The facts of unsatisfactory delivery of mortar to construction sites in the cities of Tallinn, Kokhtla-Yarve, and Tartu actually took place.

A part of the blame in breaching the mortar delivery schedules lies upon the motor transport enterprises. Due to a lack of spare parts and repair materials, etc, timely repair and getting the required number of vehicles on line are not always guaranteed.

To guarantee timely deliveries of mortar to construction organizations Minavto-shosdor [Ministry of Automobile Transportation and Highways] ESSR has adopted a number of additional measures for increasing the technical readiness of the dump truck fleet. For transporting small portions of mortar, a new design of the body of the GAZ-93 dump truck was worked out, and in the city of Tallinn a team of drivers serving the Tallinn concrete plant was transferred to an operational contract. In order to avoid delays, 10 vehicles are kept on the premises of the Tallinn concrete plant.

At the same time, solution of the mortar delivery problem strictly according to schedule in many respects depends upon the rational use of the vehicles by the construction enterprises themselves. Because the production equipment is frequently out of order, vehicles awaiting loading, undergo continuous idletime. In many construction organizations, entrance routes to the sites are in such poor condition that the supply of vehicles for the next loading is interrupted.

To improve motor transport service of technological shipment, including mortar shipments, to the enterprises and organizations of ESSR Minstroy [Ministry for Construction], ESSR Minstroy is creating a motor vehicle production association "Estonstroytrans" with cost accounting motor transport bases in the cities of Tallinn, Tartu, and Kokhtla-Yarve.

At present, mortar shipments to construction sites are under the constant control of ESSR Minavtoshosdor.

Deliveries by Rail

Moscow STROITEL'NAYA GAZETA in Russian 14 Aug 81 p 3

[Article by F. Kravtsov, chief of the Raw Material Transport and Cement Mixing Shop of the ZhBIiK [Reinforced Concrete Products and Structures] Plant, Rostov-na-Donu: "Why Are Train Cars Standing Idle?"]

[Text] From many years of experience, I conclude that train cars, especially cement carriers, are delayed at the consumer often through no fault of the consumer. A tank car may be very suitable in its capacity for transporting cement; however, 90 percent of them now on the railroad are unsuitable for unloading: the air ducting system, as a rule, does not work, and the perforated tape inside the storage tank is stopped up or torn. The top loading hatches do not close because they are cemented and are impossible to operate. And in 10 percent of the incoming cars they are even absent. The ventral unloading hatches are not hatches but holes in the storage tank. Prior to filling the cars with cement, the holes are often stopped up with paper or rags.

Well, if you receive such a "transport," you don't know from which direction to approach it. To empty the tank car may take 2 to 4 hours preparation or more. The heart is exhausted by the time you unload such a car. If the perforated tape is in good condition, you spend 2 to 2-1/2 hours unloading; if not, you use shovels. You pour the cement through the hole in the unloading hatch. It's fine if it is located straight down, but it may be found on the side too. It is simply impossible to take into consideration the amount of physical labor expended on working in a tank car, especially in the summer heat.

Who is to blame that the cement carriers have reached such a state?

The consumers often use them incorrectly. You ask, why do the perforated tapes go out of order? Because moisture or the oil from the compressors penetrates along with the air in them. The air then must be fed through filters and sumps, but this often does not happen.

The freight dispatchers insert their own tape too. They must dispatch the cement should the cars be equipped with unloading devices in good working condition. Then the hatches must be cleaned and sealed. However, these conditions are not fulfilled. And here is the reason. The absence of seals gives the supplier the possibility to underload 3 to 5 tons of cement in the car, although the documents indicate the full weight. The commerce service of the MPS [Ministry of Railroads] refuses to deliver such unsealed cars to a consumer. And the correspondence begins. People are distracted from their work; they waste their time and nerves....

In addition, the planners and the manufacturers of the cement-carrier cars do not think about how the cars will be used. The planners were fascinated with modernizing their unloading hatches, but the consumers cannot understand the

diverse systems and kinds of hatches. That's why they take the easiest route: they remove these devices and throw them out.

That's exactly how little by little everyone places "stumbling blocks" in the way of the normal use of cement carriers. I draw my conclusions based on our relations with our supplier--the Starooskol'skiy cement plant. However, I know that there is a similar situation at other enterprises too. I would like to find out the opinion of our adjoining enterprises concerning how to overcome a similar problem with cement carriers. Indeed it is simply intolerable for such things to continue.

Cement Carrier Shortage

Moscow GUDOK in Russian 29 Sep 81 p 2

[Article by I. Sobkalov, chief engineer of Cargo Service, Khar'kov: "In What Is Cement To Be Transported?"]

[Text] It is known that railroads transport more than 90 percent of the cement produced in the country. The "hopper" type cement carriers produced by the Kryukovo train car construction plant and the tank car cement carriers of the "Zhdanovtyazhmash" industrial association have a good record and are used for this transport. Although there are many of them on the roads, a shortage of this rolling stock is constantly felt. Therefore, cement is frequently loaded into covered or even open cars--these practices lead to large unproductive expenses during unloading and to losses on the way.

One can avoid such expenses if the hoppers are used correctly and rationally and if the design of their individual joints is improved.

Research conducted by specialists from the Khar'kov Institute of Transport Engineers on the Donetsk, Moscow, and Southern Railroads showed that 20 percent of the hoppers and more than 40 percent of the tank cars are not engaged in transport for days but are standing at intermediate stations because of technical and commercial disorders. Besides, large numbers of emptied cars are shuttled from railroad line to railroad line and are not being used for useful work. Moreover, these cars complicate the work process of the sorting and technical stations and increase operating expenses inasmuch as they are in the work fleet. According to regulation only those cement carriers in good working order should be delivered. Unfortunately, under the existing inventory system, they all cross the junctions of the main lines "in a bunch," as they say, without being delayed for repairs.

The hoppers and the tank cars must be unloaded through technology--in this case with the use of pneumatic systems. But all the freight recipients do not have such devices. Also, the delivery of cement carriers to stations where such devices are absent is permitted by the rules of transportation. What results from this? While unloading the tank cars, recipients of the cement partially take apart their air lines. Then, to put them back is, as a rule, impossible--there aren't enough of the necessary spare parts. Subsequently it is difficult to completely unload the cement without a pneumatic system, and the leftover cement that contacts moisture turns into concrete.

Many first run hoppers are out of order already. The imperfection of the ventral unloading devices equipped with gate valves was talked about. The train car builders now have gone to a new design of the ventral unloading devices, but they have not given recommendations on how to correct and use the old one. On the majority of the old hoppers, openings for unloading the cement are cut out in the ventral cones of the body. This is fine if they are made then for that purpose. In the majority of the cases, the mutilated cement carriers in this form also go to the loading areas.

There are dents on the body walls of many cement carriers. The dents result from the use of hammers during unloading instead of the scarce hanging vibrators. You seldom will see a tank car-cement carrier without concrete deposits at the loading hatch. They get rid of them by using high pressure hydromonitoring fittings, but they too, unfortunately, are still few.

I am confident in many respects that it is possible to solve the problem of the scarcity of cement carriers by establishing strict control over loading and unloading and by strictly observing the rules of accepting loaded and empty cars after unloading. It is also necessary, as soon as possible to construct mechanized stations for cleaning the cement carriers, stations patterned after the cleaning stations now in use for covered rolling stock.

The hoppers enter the southern railroad with the remains of the most diverse cargoes--mineral fertilizers, caustic sodas, ceramic materials, salts, sands... Their number fluctuates usually from 500 kilograms to 5 tons. But most often the cars are traveling with hardened cement. Its weight sometimes reaches up to 15 tons. This hardened cargo literally has to be "mined." Last year, for example, this is how 3,980 cement carriers were cleaned. At present their number has reached 3,000. The cement plants also are engaged in cleaning the so-called empty cars; nevertheless, the flow of cars into our railroad is increasing.

Under the existing transportation set-up, the cement carriers are leased to the sender-plants. However, once having left the railroad, this rolling stock does not return. They usually send it to various stations and use it to deliver other cargo.

In order to eradicate this practice, it is necessary to sharply raise the technological discipline on the railroads for loading and unloading cement, to determine personal responsibility for the rational use of cement carriers, and to present regulatory requirements to senders and recipients on the care of train cars. It is necessary also to bring some order into their inventory. It seems that a system of material incentive for loading and handing over suitable empty cars to a neighbor would give results. Well, this is happening now--the consignment list frequently does not have the necessary notes concerning the suitability of the car for loading.

Also the existing numbering of special assignment cars creates many inconveniences in the inventory. The system derives from the past when such cars were produced only in the hundreds. To calculate them then was easy. Now there are tens of thousands of such cars on the railroad, and a new system of inventory is needed.

Three years ago the train car central committee and the Directorate of Statistical Inventory and Accounting of the MPS [Ministry of Railways] were charged with preparing a proposal concerning the renumbering of grain-carrier cars having the numbers of cement carriers. It was intended to reduce the total number of "additional" cars with the aim of regulating their inventory. Unfortunately, up until now this has not been accomplished. Consequently, there is rolling stock for transporting cement on the account books, but there is nothing in which to transport this important national-economic cargo.

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